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Children's Nutritional Status: Are the Kids All Right?

William Evers

Elaine Turner

CHILDREN'S NUTRITIONAL STATUS: ARE THE KIDS ALL RIGHT?

William Evers, Extension Specialist; Elaine Turner, Graduate Assistant, Foods and Nutrition

If you have young children, you may wonder at times if they are getting the right amount of food for their needs. You should wonder. You are the main provider of a child's food intake and you can greatly influence his or her nutritional status.

What is nutritional status?

In order to answer this question, we need to examine what the body uses nutrients for. Usually, when we think of children we think of the importance of good nutrition for normal growth and development. Another part of nutritional status is performance. Nutrition supports not only growth, but also the active lifestyles we encourage in our children. A third part ofnutritional status is health; we need nutrients to maintain the health of all the body tissues and organs. In our society now, however, health is not just the absence of disease, but theprevention of future illness. Current evidence which links diet to chronic disease makes it important that children establish habits that promote *long-term* health and well-being.

Each of us is concerned about our health or the health of those close to us. Newspapers, radio, and TV are filled with advice about the foods we eat, the air we breathe, and the lifestyles we develop. So we do wonder if the "kids are all right," if they eat well, or if they exercise enough. However, we must address these concerns in as rational a manner as possible. By basing our judgments on the best scientific evidence available, we can draw some conclusions as to whether the nutritional status of our children is fine or whether there is need for concern.

A **nutrient** is a substance that the body must have to function properly. All nutrients are found in our food supply. Nutrients can be proteins, fats, carbohydrates, vitamins, minerals, or water. When we look at nutritional status, we are asking if a person has adequate amounts of nutrients. We want the body to function at its *best*, not to just get by. But the nutrients we need are not provided just by eating the right foods. Other factors such as exercise, stress, even weather can influence how our body is able to use the nutrients.

Assessing nutritional status

As a science, nutrition is relatively young. Much is still unknown about how foods are utilized by the body and about the long-term effects of food patterns. Various methods are used to study nutrients and how our bodies use them. To decide if a group (young children, for instance) has a problem with its nutritional status, research is conducted on a large number of people from this group. In this type of nutritional assessment, **dietary intake** is only one of the pieces of information gathered. In addition, physical measurements (also called *anthropometrics*), clinical evaluations, and laboratory studies are done. Results from all of these methods can be used to decide if a particular subgroup of the population is having a problem with nutritional status.

Dietary studies are used to determine the sources and amounts of nutrients consumed by individuals. Records are kept of the amounts and kinds of foods that are eaten. This information, along with personal data, is analyzed and compared with accepted standards such as the Recommended Dietary Allowances (RDAs). Specific segments of the population, such as teenage girls, can be studied to determine how well-nourished that group is in general. Some problems with dietary studies are: they are short-term (1 to 7 days) and may not reflect long-term eating habits; the person interviewed may not remember what was eaten; and the skills of the interviewers may vary.

Physical measurements are primarily used to assess growth. When your child visits his or her pediatrician for a check-up, height and weight are routinely measured. For infants, head circumference is also measured. All these measurements are indicators of growth. In order to understand these measurements, they are compared to standard charts such as shown in Table 1. This table gives a portion of standard heights and weights for children age 2 to 10. A weight at the 50th percentile means that he child weighs more than 50 percent of children of the same age and weighs less than 50 percent of children of the same age,based on this chart.In other words, he or she has an average weight. Your child's weight should be in or near the same percentile as his or her height. If the weight percentile is very much greater or very much less than the height, you ought to check with a qualified medical doctor, particularly a pediatrician. Sometimes in large surveys, additional measures such as skinfold thickness might be made to estimate the amount of fat a child has.

Clinical studies are designed to study individuals in more depth. Physical examinations are conducted to discover signs of nutritional problems. As with the dietary study, one problem with clinical studies is that the clinicians may differ in their interpretation of the findings. Also, in developed countries such as the United States, most nutritional problems are not bad enough to produce clear clinical signs.

Table 1. Percentile Chart for Height and Weight*

	Height Percentile			Weight Percentile		
Age	10	50	90	10	50	90
			Boys			
Years		Inches			Pounds	
2	33	34	36	24	27	30
3	36	38	40	28	32	36
4	39	41	43	32	36	41
5	41	43	46	35	39	46
6	44	45	48	39	44	52
7	45	47	51	42	49	59
8	48	50	53	46	55	67
9	50	52	55	52	61	77
10	52	54	58	58	68	86
			Girls			
Years		Inches			Pounds	
2	33	34	36	23	27	31
3	36	38	40	28	32	38
4	39	42	43	32	37	46
5	41	44	46	35	41	50
6	43	46	48	39	45	54
7	44	48	51	42	50	60
8	47	50	53	47	56	70
9	49	52	56	51	62	82
10	51	55	59	57	70	93

Nutritional Assessment in Health Programs." George Christakis, ed., American Journal of Public Health 63(1973)(pt. 2): 47-48.

Laboratory investigations are more objective. Biochemical measurements of nutrients from blood and other fluid samples are analyzed to pinpoint nutritional problems. Unfortunately, the results of these tests can be difficult to interpret without information from clinical and/or dietary studies.

There are still many questions concerning how our bodies use food. There are no easy answers in a system as complex as the human body. For the unanswered questions, we must use common sense and good judgment until we discover the answers.

Results from surveys

Several surveys, using the methods just described, have been carried out in this country. Generally, these surveys are useful for looking at groups within the population. It is harder to apply the values to individuals. The first and second National Health and Nutrition Examination Surveys, the National Food Consumption Survey, and the Continuing Survey of Food Intakes by Individuals are the most well-known surveys. Dietary results from these surveys are usually compared to the Recommended Dietary Allowances (RDAs).

Researchers have reported the following on the nutritional status of children:

- Although dietary studies show that many groups have iron intakes lower than the RDA, the prevalence of iron deficiency, based on laboratory measures, is less than would be expected. Marginal iron status is more com mon in young children (6 mo.-3 years) and adolescent females.
- Low blood levels of vitamin A were found in a few groups, especially children of low-income families. No clinical signs of vitamin A deficiency were found. Decreased folate status was also more common among low-income children.
- Examining skinfold thicknesses indicated an increase in body fatness among 6-9-year-olds. However, the increase in body fatness was not accompanied by an increase in body weight for height or an increase in calorie intake. The apparent increase in childhood obesity may be more related to activity level than calorie intake.

Clinical studies showed that there were actually few physical signs of malnutrition. This has been true of other clinical studies reported in the literature. In the United States, there are almost no citizens, children or grown-ups, who have a purely nutritional deficiency disease. Any disease with nutritional signs is usually related to some other illness such as infection, rauma from an accident, or cancer.

Kids and Cholesterol

Recently the Expert Panel on Blood Cholesterol Levels in Children and Adolescents examined data regarding dietary intake, blood cholesterol levels, and indicators of atherosclerosis. Food intake data show that both fat intake and saturated fat intake exceed recommended levels. In addition, at least 25% of American children and adolescents have blood cholesterol levels above the level that the expert panel defined as "acceptable." This expert panel, along with other scientific groups, has recommended that all healthy children over the age of 2 years should follow a diet low in total fat and saturated fat.

Breakfast: off to a good start

Some researchers have suggested that children who skip breakfast do not make up the missed nutrients at later meals. There is also concern that skipping breakfast as a child may set a pattern for adulthood. Some studies show that children function better in school when they have eaten breakfast. Another study concluded that ready-to-eat cereals contributed significantly to the number of breakfasts eaten and that these cereals were a good source of nutrients for children. This is significant because many ready-to-eat cereals are fortified with iron, and iron is a nutrient found to be low in diets of children. Other foods are equally important for a breakfast meal. Non-traditional breakfast foods can be as beneficial as the more standard foods.

Vitamins, vegetarianism, and hyperactivity

There are other concerns related to food and our children, such as the use of vitamin supplements, vegetarian diets, and hyperactivity. Many parents wonder whether their child needs a **vitamin** and/or **mineral supplement**. Kids usually like vitamins because they come in cute shapes and are sweetened so they taste good. If your child is generally healthy and gets a variety of foods from all the food groups, there is probably no need for a vitamin or mineral supplement. Supplements are expensive and do not provide "insurance" as is often claimed. In fact, they may expose your child to excessive amounts of fat-soluble vitamins and minerals.

Vegetarian diets may have some effect on the size and body weight of a child. Nutrients, such as iron and vitamin B_{12}, will be harder to obtain. If you have chosen a lifestyle that prohibits the use

of meat, dairy products, or other animal foods in your child's diet, you are obligated to see that the child's nutritional needs are satisfied by another food source.

There is a theory that artificial flavors and artificial food colors cause **hyperactivity** in children. This theory has not been scientifically validated. The first problem is in the diagnosis of a hyperactive child. Established standards are not always followed and a child may be unjustly labeled "hyperactive" to justify an adult's inability to deal with a different behavior problem. Even when hyperactivity is confirmed, it does not appear that food additives are the problem. Sugar has also been implicated in hyperactivity, again without scientific proof.

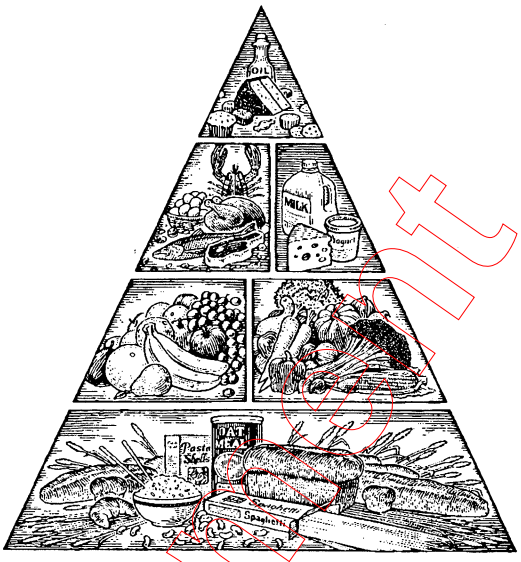
In almost all cases, factors such as family interactions, increased attention, or changes in nutritional status seem to play a more important role.

What parents ought to be doing

The *Dietary Guidelines for Americans* can apply to feeding children. The guidelines provide sensible advice to those involved with the care and feeding of children.

1. **Offer a variety of foods.** No one food provides all the nutrients we need, nor does any one food group. We need a variety of foods from all the food groups: fruits, vegetables, dairy products, grains, and meats and alternates. Serving a variety of foods increases the probability of getting all the nutrients. It also teaches good food habits. For more information about food groups, ask your Cooperative Extension agent for information about the Food Guide Pyramid.

2. **Serve meals that help maintain a healthy body and weight.** We have already mentioned that some indicators show an increase in body fatness among America's children. Excess calories and too little exercise can be a problem for our children. Try to limit the number of high-calorie foods that contain relatively few other nutrients. We need sugars, fats, and oils in our diet, but they should come from foods that also contain a variety of vitamins and minerals.



3. **Offer foods that are low in fat, saturated fat, and cholesterol.** Many scientific and medical groups now promote a diet low in fat for all individuals over the age of 2 years to help reduce the risk of heart disease. It is important not to be too strict with diets in children, as it may become difficult for them to eat enough food on a very low-fat diet. Simple substitutions, such as low-fat dairy products and baked rather than fried foods, can lower the fat content of the diet without eliminating important nutrients.

4. **Serve plenty of vegetables, fruit, and grain products.** These foods are our best sources of many vitamins, carbohydrates, and fiber. Served naturally, they are also low in fat. Children need to be familiar with vegetables in order to develop a preference for them. So if your child rejects vegetables now, don't be discouraged. Try vegetables in their raw form as an alternative to cooked vegetables. Many children like them better that way.

5. **Offer and use sugars only in moderation.** Foods which are high in sugar content are often low in other nutrients. Thus, these should be saved for special occasions. Frequent eating of sticky, sweet foods may make the teeth susceptible to cavities as well.

6. **Offer and use salt and sodium only in moderation.** There is some evidence that excessive use of sodium may be a factor in the development of high blood pressure. We do need to have some sodium in our diets, but the amount we need for good health is relatively small. Using

fewer processed foods and looking for snack foods which are unsalted helps to lower sodium intake.

7. **Promote an alcohol- and drug-free lifestyle.** If we just consider nutritional status, alcohol and drugs can interfere with our ability to use the nutrients we get in our foods.

A final way you can responsibly assist your child's nutritional well-being is to be skeptical of media reports and advertising about new diets, new nutritional problems, or "dangerous substances" in our food supply. If you are concerned about anything having to do with food and/or nutrition, talk to a qualified professional at a nearby college or university, someone at your county Extension office, or a registered dietitian. You are responsible for maintaining your child's nutritional well-being. Therefore, you should seek the best information available about the nutritional needs of children. In general, your child is probably in good shape from a nutritional standpoint. If you are unsure, then you must seek competent, professional advice from a qualified source.

Interested in learning more?

Extension Homemaker Clubs study topics including nutrition, management, housing, textiles, and human development at monthly meetings. Local members receive training and present educational programs. Over 600,000 members nationwide benefit from this association with the land grant college in their state. For more information, contact your county Extension office.

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